AERONAUTICAL MATERIAL SPECIFICATION

Society of Automotive Engineers, Inc. 29 West 39th Street **New York City**

AMS 4650C

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COPPER - BERYLLIUM ALLOY BARS AND FORGINGS Solution Treated

- ACKNOWLEDGMENT: A vendor shall mention this specification number and its revision letter in all quotations and when acknowledging purchase orders.
- 2. FORM: Rods, bars, and forgings.
- APPLICATION: Primarily for parts requiring high strength with good electrical conductivity or lack of magnetic susceptibility.
- COMPOSITION:

1.90 - 2.15 Beryllium 0.20 min Nickel or Cobalt 0.60 max Nickel & Cobalt & Iron Copper + total named elements 99.50 min

- CONDITION: (a) Unless otherwise specified material shall be supplied solution heat treated, and cold-finished if necessary, in a suitable condition for precipitation heat treatment.
 - (b) Stock ordered for Yorging shall be supplied as ordered by the forging manufacturer.
 - (c) The cross-sectional area of rods and bars shall be less than onehalf that of the ingots from which they are formed; i.e., rods and bars shall have been subjected to over 50% reduction of area during formation.
- 6. TECHNICAL REQUIREMENTS: (a) Hardness As Received.

Nominal Diameter or Thickness Inches

Hardness Brinell (1000 kg load)

1.5 and under Over 1.5

160-223 200 max

- (b) Hardness After Re-solution and Precipitation Heat Treatments.- Material after re⇒solution heat treatment and precipitation heat treatment at 600 F * 5 for 3 hours and cooling in air shall have hardness of Rockwell C 33-40.
- (c) Physical Properties After Precipitation Heat Treatment.- Material after precipitation heat treatment at 600 F * 5 for 3 hours and cooling in air shall conform to the following requirements:

Tensile Strength, psi

150,000 min

Yield Strength at 0.2% offset or at 0.0170 inch in 2 in. extension under load, psi

120,000 min

Elongation. % in 4D

3 min

Hardness, Rockwell

C 35 - 42

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